

# Dimensionally Stable Membrane for High Pressure Electrolyzers, Phase I

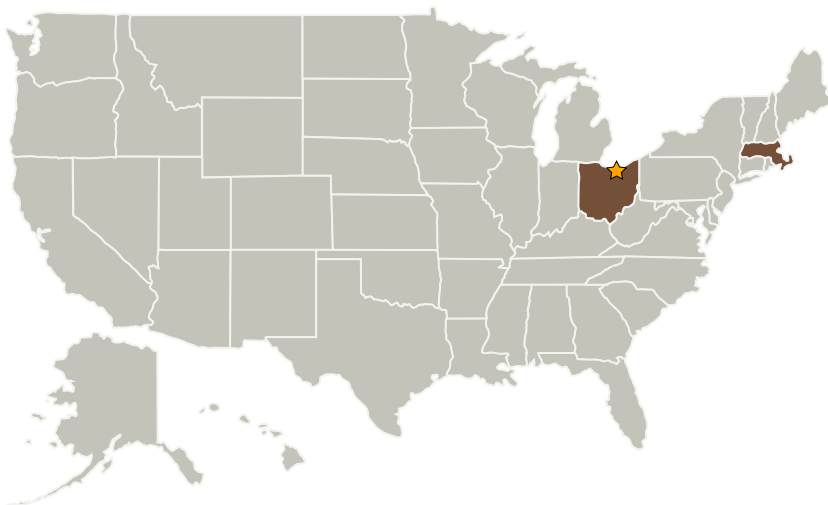
Completed Technology Project (2008 - 2008)



## Project Introduction

Utilizing high strength polymers with controlled pore dimensions as a support, a customized membrane electrode assembly (MEA) can be generated for NASA's electrolyzer stack that has optimized electrochemical performance with greatly improved mechanical properties enabling high pressure (>1000 psi) operation. The overall objective is to generate and test an optimized dimensionally stable membrane (DSM) for a lunar NASA application. This will be accomplished through four tasks; 1. Generation of DSM MEAs of various configurations; 2. Testing of these MEAs; 3. Modeling and fitting of test data to electrolyzer performance; 4. Use model to generate optimum 1000 psi Electrolyzer MEA and test.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Giner Electrochemical Systems, LLC	Supporting Organization	Industry	Newton, Massachusetts



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Glenn Research Center (GRC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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## Primary U.S. Work Locations

Massachusetts

Ohio

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

Carlos Torrez

### Principal Investigator:

Cortney K Mittelsteadt

## Technology Areas

### Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - └ TX06.2 Extravehicular Activity Systems
    - └ TX06.2.4 Decompression Sickness Mitigation